

CLAIMS

We claim:

- (1) An ergonomic syringe, to be used for injecting fluids under pressure, including:
  - a) a generally hollow barrel member directly into which fluids may be drawn, and having an opening at its distal end and an opening at its proximal end;
  - b) a plunger shaft which may slidably move forward and rearward inside of said hollow barrel member;
  - c) a handgrip located on the proximal end of said plunger shaft, said handgrip including:
    - (i) a handgrip arch located on the proximal side of the handgrip generally opposite a point at which the handgrip joins the plunger shaft, said handgrip arch shaped generally in a curve to fit upon the portion of the palm of an operator's hand defined by the ball of said operator's thumb and a significant area of the adductor pollicis muscle;
    - (ii) a handgrip base extending away from the handgrip arch, said handgrip base being formed as an elongate finger generally shaped to fit a significant part of the lower portion of the palm of the operator's hand generally including an area distal to the palmar surface of the annular ligament of the hand.
- (2) The plunger shaft of claim (1) further including a portion of the handgrip, extending in a direction generally opposite that of the handgrip base and in generally the same axis as the handgrip base, and including at least one selected from the group comprising a thumbrest, a thumbhook located generally opposite the thumbrest and on the distal surface of the handgrip, and a thumbring located generally opposite the thumbrest and on the distal surface of the handgrip.
- (3) The syringe of claim (1) further including a nozzle at its distal end, said nozzle having a connector for purposes of connecting to other catheterization equipment.
- (4) The syringe of claim (1) further including a barrel cap located at the proximal end of the barrel member, through which the plunger shaft passes.

- (5) An ergonomic syringe, to be used for injecting fluids under pressure, including:
- a) a generally hollow barrel member directly into which fluids may be drawn, and having an opening at its distal end and an opening at its proximal end;
  - b) a plunger shaft which may slidably move forward and rearward inside the lumen of said barrel member; said plunger shaft having a handgrip located on its proximal end; said handgrip having a handgrip arch located generally opposite a point at which the handgrip joins the plunger shaft;
  - c) a bottom fingergrip, located on an outside wall of said barrel member, having an interior bottom fingergrip into which an operator may insert at least one finger for the purpose of gripping said syringe wherein: said bottom fingergrip further includes an anterior bottom fingergrip which the operator may grip using at least one finger of the hand opposite the hand gripping the interior bottom fingergrip; said anterior bottom fingergrip being located on the distal surface of the front wall of the bottom fingergrip; a vertical plane of a topmost portion of a rearmost wall of the interior bottom fingergrip where a third finger is placed being forward of bottom portions of the interior bottom fingergrip where the fourth and little fingers are placed;
  - d) a top fingergrip located on an outside wall of said barrel opposite the wall on which the bottom fingergrip is located, said top fingergrip having a finger ring into which an operator may insert at least one finger for the purpose of gripping said syringe, said top fingergrip further including an anterior top fingergrip and anterior top fingergrip catch, for placing during injection at least one finger of the operator's hand opposite that which grips the interior bottom fingergrip wherein a vertical plane of a rearmost wall of the finger ring being forward of the vertical plane of a topmost portion of a rearmost wall of the interior bottom fingergrip
- (6) The syringe of claim (5) further including a nozzle at its distal end, said nozzle having a connector for purposes of connecting to other catheterization equipment.
- (7) The syringe of claim (5) further including a barrel cap located on the proximal end of the barrel member, through which the plunger shaft passes.